

FRODO BAGGINS

## INFORMATION REPORT INFORMATION REPORT

## CENTRAL INTELLIGENCE AGENCY

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S E C R E T

COUNTRY Poland

REPORT

SUBJECT Lenin Foundry in Nowa Huta

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Components

1. The original plans for the Lenin Foundry (Huta Lenins) in Nowa Huta, near Krakow, drafted by the State Institute for Planning Metallurgical Plants (Gosudarstvenny Institut Proektirovaniya Metallurgicheskikh Zavodov) in Moscow, envisaged a combine composed of the following installations: (Production figures per annum)
  - a. A coke plant consisting of six batteries with a combined output of one and a half million tons of coke. A plant to process coal chemically was to be constructed adjacent to the coke plant.
  - b. Four blast furnaces, each with a capacity of 1,033 cubic meters, which were to yield 1.6 million tons of pig iron, 400,000 tons for immediate sale, and 1.2 million tons for further processing. A sintering plant (spiekalnia rudy) with a production of two million tons, was also to have been included.
  - c. The steel foundry (stalownia) which was to comprise 11 Siemens-Martin furnaces; three of these to be 370-ton tilting crucibles and eight fixed furnaces with an individual capacity of 185 tons. According to the plan, the plant was to produce 1.5 million tons of raw steel.
  - d. A hot rolling mill, with an output of 600,000 tons of steel sheets 2 to 12 mm. thick.
  - e. A cold rolling mill, which was to produce 200,000 tons of sheets 0.2 to 2 mm. thick.
  - f. A rolling mill for angles and joists with a 250,000-ton production.
  - g. A wire drawing mill to produce 50,000 tons of wire 3 to 6 mm. in diameter.
  - h. A blooming and slabbing mill for working steel into rails and billets, and a rolling mill for small billets (walcownia rygli) with a 300,000-ton capacity which were to be established as auxiliary plants.
  - i. A plant for fire resistant material (zaklad materialow ogniotrwalych) which would

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manufacture 80,000 tons of refractory bricks and powder, and 40,000 tons of silicate products.

2. A power plant, with a 56,000-kwh. capacity, which was to supply current to the entire plant, steam for technological purposes, and heat for the plant and the town of Nowa Huta, was to be constructed.
3. A repair shop (zaklad remontowy) to serve the entire plant, was to include:
  - a. A cast iron foundry, with a 42,000-ton capacity.
  - b. A steel foundry, with a capacity of 11,000 tons.
  - c. An iron construction shop, to produce 5,000 tons.
  - d. A shop for wooden forms to serve the foundry.
  - e. A shop to repair the plant's electrical machinery.
  - f. An oxygen plant which would produce 125 tons of oxygen per hour.

Construction of the Lenin Foundry began in 1951, and the repair shop was the first installation completed. In December 1951 the iron construction shop began operating. It contains a Soviet plate-bending machine (rolls), a Hungarian plate shear, and a number of Polish standard sheet-working machines. In May 1952 the mechanical workshop was put into operation. It comprises 120 machines. Half of the machines are of Soviet manufacture, 10 percent is German, and the remainder Polish. Subsequently, the carpentry shop, which has 10 percent Soviet equipment and the rest Polish, was opened. In October 1952 the steel foundry began operations; it has two Soviet furnaces each with a 5-ton capacity. The cast iron foundry, inaugurated in April 1953, is equipped with two coke ovens of a 10-ton capacity and two ovens one-half that size. In March 1953 the electrical workshop and the oxygen plant, both of which have Soviet machinery throughout, began working.

4. In early September 1953 the plant for fire resistant materials was opened. It is composed of chamot<sup>1</sup>(Wydzial Szamotowy) and silicate (Wydzial Silikatowy) divisions. The chamot department is equipped with Soviet brick-forming presses, five Hoffman-type gas heated furnaces (piece okresowe), made in Poland according to Soviet specifications, and two 140-meter tunnel ovens (piece tunelowe) which operate continuously. All of the mechanical components of the ovens are made in the USSR. The chamot department operated uninterruptedly and fulfilled its quota until 1955, when its production was discontinued because of unmarketability. In 1956 it was converted to chrome-magnesite production, and new Hungarian machinery was installed. Although its planned annual production was 40,000 tons, it has produced only 12 to 15 tons annually. Austria and Czechoslovakia supply the raw materials; recently negotiations were in progress concerning the import of necessary items from Yugoslavia.
5. The power station has worked without interruption and at peak capacity since 1954. Its Soviet equipment comprises four boilers working with 100 atmospheres pressure and producing 170 tons of steam an hour; if one or two boilers are being repaired the others can bear the load. There are two 25,000-kwh. turbogenerators and one of 5,000-kwh. capacity. The plant also houses the blowing engines (turbo dmuchawy) for the blast furnaces.
6. The first blast furnace, operable in July 1954, initially produced 900 to 1000 tons of pig a day, but as a result of various improvements (increased use of air pressure, roasted ore, and lime), it now produces 1250 tons daily. The yield of the second furnace, which went into operation in May 1955, surpasses that of the first. A third furnace, with a capacity of 1380 cubic meters, is scheduled to begin operation in early 1958. A fourth furnace, with a 1500 to 1800 cubic meter capacity, is being planned in the USSR.

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7. The ore roasting plant was put into operation in 1954. Its four conveyors were initiated in December 1954, January 1955, and two in 1956, respectively. The plant, which is completely equipped with Soviet machinery, produces 6500 tons daily. Its operations have been unsatisfactory because of mechanical shortcomings, and despite improvements, difficulties continue. Two additional conveyors are planned for the plant.
8. In 1955 the tilting furnaces of the steel foundry began operating, and in 1956 three fixed furnaces were initiated. Instead of the five additional 185-ton fixed furnaces, as planned, two fixed furnaces of 370-ton capacity will be built; one is under construction and will be put into operation in 1958. The steel casting section is the most ineffective part of the Lenin Foundry; constant repairs are required and the plant manager has been changed three times. Apparently, the Poles are not as yet prepared to work on a furnace of this size.
9. The blooming mill has operated successfully since its inception in April 1955. All of its equipment is Soviet. The hot rolling mill, in operation since May 1956, does not work efficiently, but difficulties are being gradually surmounted. As of mid-1957, only these two rolling mills were in operation.
10. The cold rolling mill is now being assembled, and is scheduled to start working in 1958. With the exception of the electrical motors and equipment, all of its machinery is Soviet. However, it is doubtful whether the mill will open on schedule, for the electric motors are defective, and Polish engineers have been unable to visit and study a similar Soviet plant in Magnitogorsk. Although a group was going to leave in April 1957, they received a telegram from the USSR which said "the arrival of the group was not desirable". When the Polish Embassy in Moscow investigated the matter, it was informed that a similar group which had been at Magnitogorsk from December 1956 to April 1957 "had not behave properly". There is no substantiation for this claim; however, it is known that the Magnitogorsk plant does not function properly.
11. Equipment for a "small profiles" rolling mill, which was supplied by East Germany in 1953, was sold to Czechoslovakia in 1956. Information on other rolling mills is not available.
12. The first battery of the coke plant began operating in November 1954, the second in the next month, the third and the fourth in 1955. The fifth battery, now under construction, is scheduled to start operations in late 1957, while the construction of the sixth battery was stopped because of lack of funds.

#### Products

13. Of the one million tons of coke produced annually by the Lenin Foundry, 800,000 tons of the metallurgical Sundgren 310 type, with each grain a minimum of 10 centimeters. Most of this coke is consumed by the plant itself, while 100,000 tons are exported to East Germany and Hungary. Two hundred thousand tons of smaller grained coke for other industrial purposes are also produced. The small quantities of coal by-products (tar, diesel oil, lubricating oil, naphthalene, ammonium sulfate, sulfur, toluene and ammonia) produced at the adjacent chemical plant are marketed through the Oil Products Center (Centrala Produktow Naftowych). 25X1
14. The blast furnaces produce 850,000 tons of pig iron a year, of which the works uses all but 100,000 for processing. The remainder is sold [ ] domestically [ ] 25X1
15. Including added scrap, the steel casting plant produces one million tons of steel annually, all of which is processed into rolled steel by the blooming mill. Four hundred thousand tons out of a total 850,000 rolled steel produced are hot rolled, while the rest, in the form of billets, is sold to other Polish foundries, [ ] 25X1

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Ninety percent of the steel sheets produced are exported, mostly to [redacted] China, [redacted] and Rumania.

#### Raw Materials

16. The plant consumes two million tons of iron ore annually, 30 percent of which is supplied domestically. The USSR supplies 75 percent of the plant's import requirement, while [redacted] China [redacted] supply smaller quantities of the ore. 25X1
17. The plant's annual coal requirement, about 1.5 million tons, is supplied locally. The plant uses four grades of coal, the best of which (Wegiel Uszlachetniajacy), is mined at Rybnik and Walbrzych. Since this type of coal is not abundant and since the Lenin Foundry has priority, other coke plants are occasionally forced to close down as, for example, during the winter of 1956-1957. As a consequence, the coke plant is limited to a maximum production of one million tons.
18. Quarries 25 km. from Nowa Huta provide all of the limestone required by the plant.
19. The Lenin Foundry is self-sufficient in scrap, of which it requires 250,000 tons annually. Seventy percent is supplied by the rolling mills. Similarly, the coke plants and blast furnaces supply industrial gas.
20. Of the plant's labor force of 17,000, about 18 percent are women employed principally in administrative positions. There are also 600 engineers and technicians, and 1200 clerks. Although currently only three Soviet experts, employed in connection with the assembly of the cold rolling mill, are at the plant, 50 Soviet instructors were at the plant until 1955. East German experts, also at the plant during 1954-55, dealt with the assembly of heavy transportation equipment, which although imported from the USSR, was originally German.

#### Equipment and Transport

21. The Lenin Foundry has the following loading and transport equipment:
  - a. Nine kilometers [of] rubber conveyors.
  - b. Two hundred electrical cranes, six of 260 tons, four of 125 tons, twenty of 5 tons, and the remainder of smaller capacity, down to 3 tons.
  - c. Fifty locomotives, 400 railroad cars with capacities from 15 to 30 tons (half of them the Talbot type), two hundred 3 to 5-ton trucks, mostly of the Star type, and about 30 Warszawa automobiles. The plant's railroad station has 30 km. of sidings (the same size as the pre-war Gydnia station), as well as four auxiliary stations.
22. The 500 freight cars which enter the plant daily carry 6000 tons of ore and 4000 tons of coal. The plant maintains a three-week reserve stock of ore, but only a week's supply of coal. In fact, until 1957, the plant generally only had one or two car-loads of reserve coal. An individual freight car dumper, each to unload two freight cars simultaneously, unloads the ore and the coal. There are two tunnels between the railroad station and the plant for throwing (odmrazanie) coal and ores; a third tunnel is under construction.
23. Krakow and wells in the town of Nowa Huta supply drinking water for the plant, while industrial water, at the rate of four cubic meters a second (six cubic meters by 1960), is taken from the Vistula River.

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24. The plant's generator provides only 56,000 kwh., necessitating a supplement from the general grid; moreover, even when the power plant reaches full capacity, the general network will still have to supply 89,000 kwh.

#### Security

25. Six square kilometers of the plant's 10-square-kilometer site are surrounded by a concrete fence, while the remainder has no barrier. The following are outside the fence: the railroad station, a pumping station, which is actually three kilometers from the fence on the banks of a basin (basen portowy) which will eventually be an inland waterway port. The pumping station, the most sensitive part of the plant, is under continuous KBW (Internal Security Corps) guard. Also beyond the fence are automobile repair shops and garages, and a slag-processing plant. Inside the fence there are 45 km. of asphalt roads, 150 km. of rail tracks, 20 hectares of lawn and specially planted groves, and 41 chimneys ranging in height from 40 to 105 meters.

#### Cost

26. According to the original Polish plan, the construction of the Lenin Foundry was to require an allocation of nine billion zlotys, not including the cost of the construction of the town of Nowa Huta, rail and road access, connection of the power plant to the general grid, and construction of the bridge over the Vistula. According to the data of the plant's management, six billion zlotys had been expended by mid-1957, and no one at the plant knew exactly how the account stood with the Soviets. Although under terms of a bilateral 1948 agreement, the Soviets were to undertake to supply the equipment for the plant on a long-term credit basis, it is known that the Soviets have been paid per project in rubles.

#### Revision of Plans

27. Since the blooming mill division has a larger capacity than originally planned, a plan has been formulated to expand the plant during the period 1961-1965 so that it can absorb three million tons of raw steel a year, and yield 2.2 million tons of rolled steel. Although the Soviets want to work out the preliminary plan, the Poles are reluctant to let them do so because they demand 15 million zlotys for this service, and also because the planning bureaus in Gliwice and Krakow are almost idle. Official approval of the expansion plan would require the construction of another steel plant, equipped with Bessemer converters rather than with Siemens-Martin furnaces.
28. During 1957 a pilot Bessemer converter of 15 tons' capacity will be built at the Lenin Foundry. Polish teams from the foundry and the Krakow planning bureau have visited Austria to study Bessemer converters. As a first step the rolling mills will have to be expanded so that they can produce one million rolled products /sic - probably one million tons is intended/. Construction of a pipe plant, not provided for in the initial plans, is also under discussion.

#### Personalities

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29. The following persons are known to be employed at the Lenin Foundry:

a. Henryk Bieda, [redacted]

b. Czeslaw Brozkiewicz, [redacted]

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c. Zbigniew Centkowski,

d. Antoni Czechowicz,

e. Jan Galinski,

f. Boleslaw Graszewski,

g. Aleksander Jewasinski,

h. Wlodzimierz Karbownicki,

i. Jan Kawalski,

j. Stanislaw Kubala,

k. Ludwik Lason,

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1. Zbigniew Loreth,

m. Eugeniusz Mazanek,

n. Boleslaw Mitka,

o. Wacław Rudzinski,

p. Tadeusz Socjusz,

q. Stanislaw Swierczek,

r. Jerzy Szumilas,

s. Stanislaw Tytko,

t. Kazimierz Wajnbergier,

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30. A sketch of the area of the Lenin Foundry and a sketch of the layout of the foundry  
Both are accompanied by keys.

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1. Comment: As received. Possibly from the German word Shamotte meaning  
fire-proof clay.

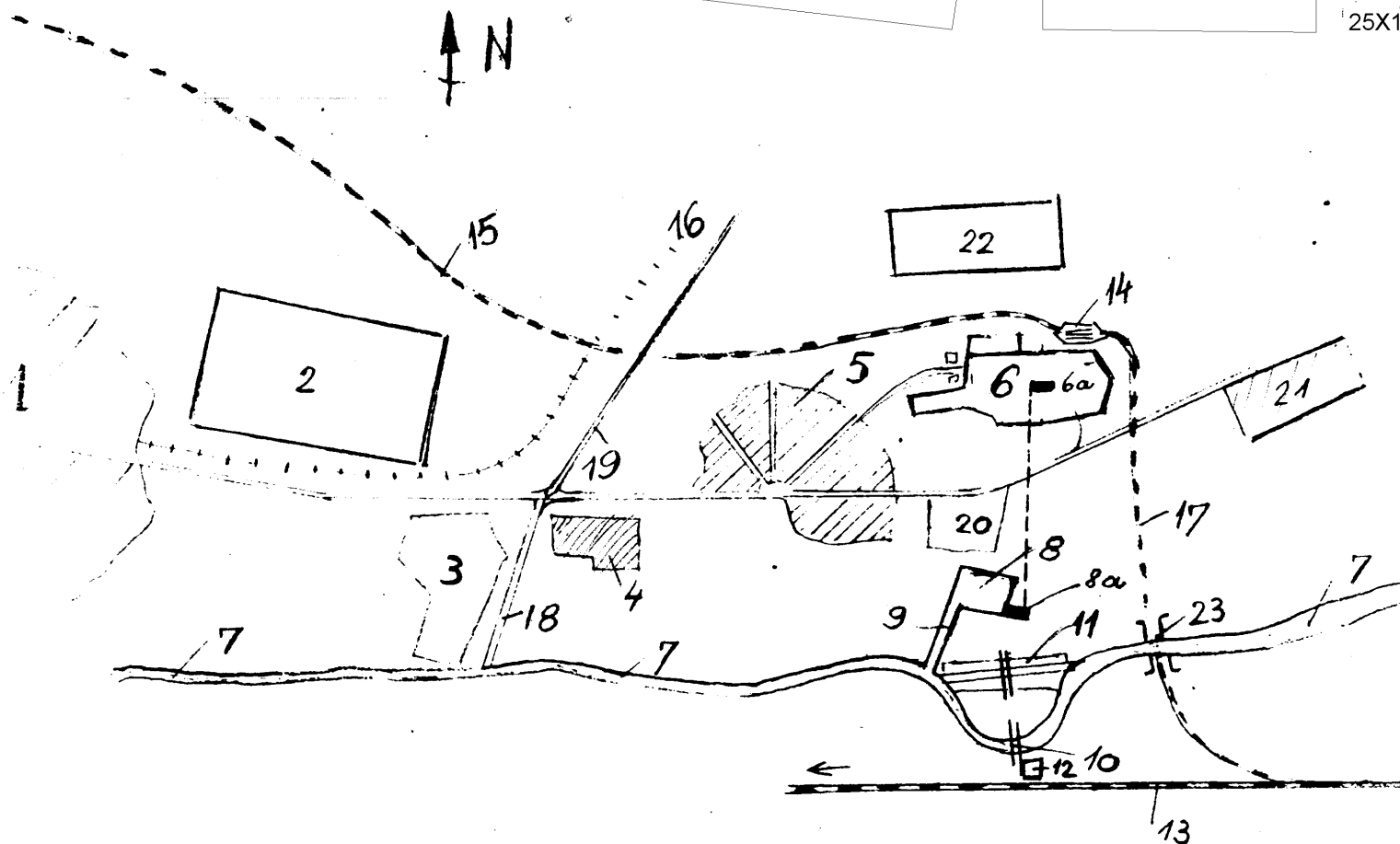
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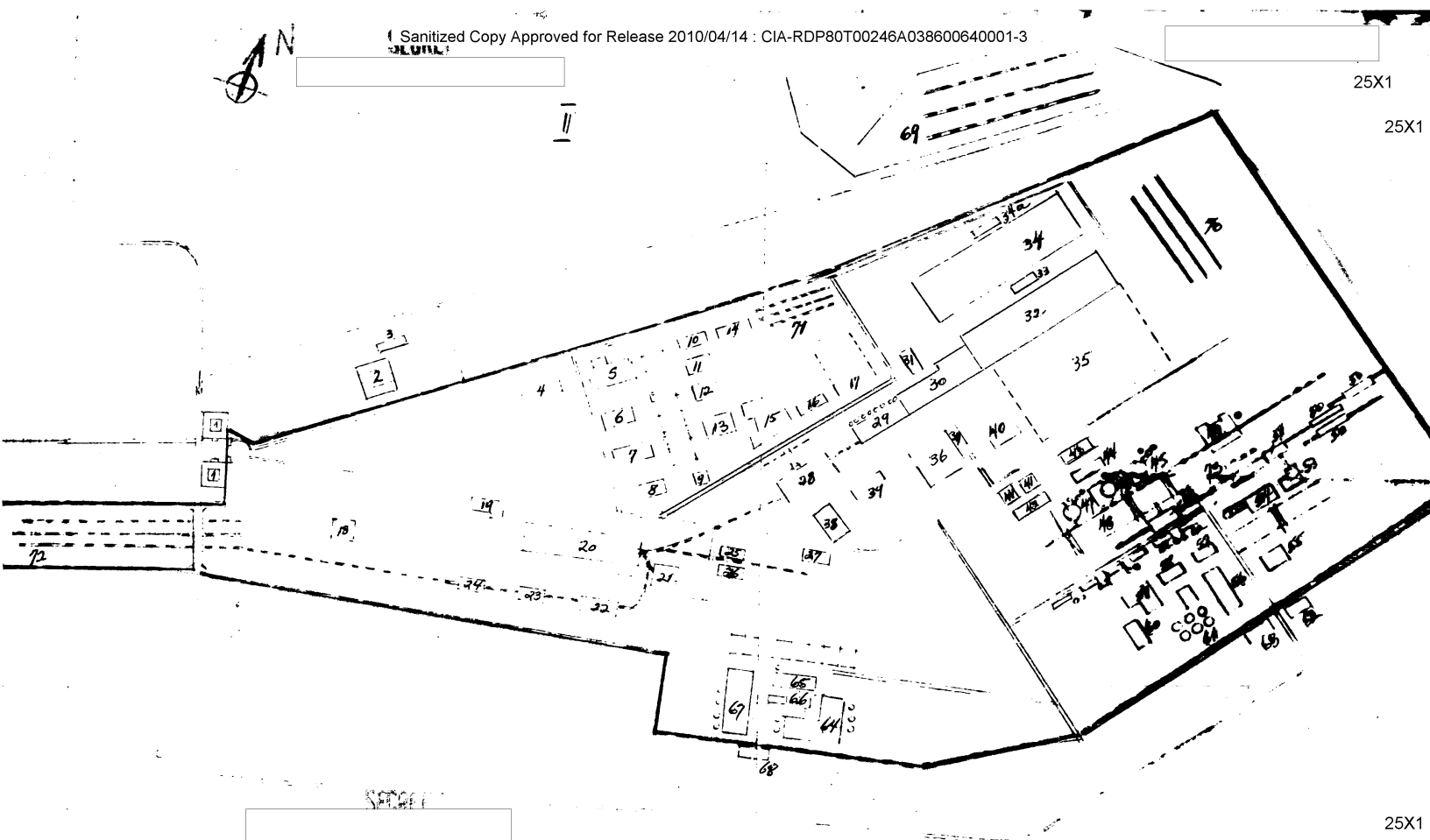
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Legend to Sketch I

1. The town of Krakow
2. Military and civilian airfield
3. Czyzyny village
4. Czyzyny cigarette plant
5. Nowa Huta township
6. The Lenin Huta
- 6a. The No. 2 Pumping Plant
7. Vistula River
8. New reservoir for pumping plant No. 1 designed to be an inland waterway port.
- 8a. Pumping Station No. 1
9. New canal for the reservoir
10. Dam across the Vistula
11. Canal lock (planned)
12. Hydroelectric power station 2000 KW (existing)
13. Krakow-Przemysl railroad line
14. Railroad freight station of the plant
15. New railroad line from the plant to Silesia which by-passes Krakow
16. Old local line Krakow-Kocmyrzow
17. New railroad connecting with the Przemysl line
18. Road to Czyzyny village
19. Road to Kocmyrzow

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20. Mogila village (with ancient monastery)
21. Pleszow village
22. Krzeslawice village
23. Railroad bridge over the Vistula



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Legend to Sketch II

Red line — Concrete fence (boundary) of the plant area

1. Administration building
2. Garages for automobiles
3. Automobile workshop
4. Electric workshop
5. Iron foundry
6. Steel foundry
7. Mechanical workshop
8. Forge
9. Oxygen plant
10. Form-making plant
11. Form store
12. Spare parts store
13. Repair and assembly shop
14. Repair and construction shop
15. Locomotive shed
16. Roll turning shop
17. Transformer station
18. Scrap breaking installation - Kafar
19. Department for the preparation of casting forms - Kokil
20. Steel casting shop (main hall)
21. Mixers
22. Scrap dump

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23. Dump for brittle material, such as lime and dolomit
24. Alloy dump (ferrosilicone, ferromanganese, and ferrochrome)
25. Workshop for the steel foundry
26. Store for fire resistant materials
27. Transport department (administration)
28. "Strippelhalle" - Wydział Zdejmowania Wlewnic
29. Sunken furnace of the blooming mill
30. Blooming mill
31. Blooming mill offices
32. Hot rolling plant
33. Hot rolling plant offices
34. Cold rolling mill
- 34a. Cold rolling mill office
35. Site for additional rolling mills
36. Power Station
37. Blowing machine hall (Hala turbo-Dmuchaw)
38. Central laboratory
39. Central dispensary
40. Unloading site for coal for the power station
41. Water tanks
42. No. 2 Pumping Station
43. Blast furnace offices
44. Gas department
- 45-47. Blast furnaces Nos. 1, 2, 3.
48. Ore dump

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49. Ore roasting installation
50. Tunnel (Rozmrazalnia Rud)
51. Coal wagon dumper
52. Ore wagon dumper
53. Coal mill at the coke plant
54. Coal mixing department at the coke plant
55. Workshop of the coke plant
56. Tar department
57. Coke plant laboratory
58. Gas exhausts
59. Ammonium sulfate department
60. Naphthalene department
61. Benzol department, with tanks
62. Coke plant offices
63. Restaurant and clothes checking department of the coke plant
64. Refractory brick department
65. Fire resistant powder department
66. Laboratory of the fire resistant materials department
67. Chrome-magnesite (formerly silicate) department
68. Office of the fire resistant materials department
69. Main railroad freight station
70. Auxiliary railroad station for the rolling mill
71. Auxiliary railroad station for the repair shops
72. Auxiliary railroad station for the steel foundry
73. Auxiliary railroad station for the blast furnaces and coke plant

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